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(21) International Application Number: PCT/EP99/07800 (22) International Filing Date: 6 October 1999 (06.10.99) (30) Priority Data: 98203529.7 20 October 1998 (20.10.98) EP (71) Applicant (for all designated States except US): VLAAMS INTERUNIVERSITAIR INSTITUUT VOOR BIOTECHNOLOGIE VZW [BE/BE]; Rijnvissechestraat 120, B-9052 Zwijnaarde (BE). (72) Inventors; and (75) Inventors/Applicants (for US only): STEIDLER, Lothar [BE/BE]; Bokslaarstraat 41, B-9160 Lokeren (BE). REMAUT, Erik, Rene [BE/BE]; Bergstraat 7, B-9921 Vinderhout (BE). FIERIS, Walter [BE/BE]; Beukendreef 3, B-9070 Destelbergen (BE). (74) Common Representative: VLAAMS INTERUNIVERSITAIR INSTITUUT VOOR BIOTECHNOLOGIE VZW; Rijnvissechestraat 120, B-9052 Zwijnaarde (BE).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> (88) Date of publication of the international search report: 3 August 2000 (03.08.00)	

(54) Title: USE OF A CYTOKINE-PRODUCING *LACTOCOCCUS* STRAIN TO TREAT COLITIS

(57) Abstract

The current invention relates to an administration strategy for the delivery at the intestinal mucosa of cytokines or cytokine antagonists, preferably of acid sensitive anti-inflammatory agents, such as IL10 and/or soluble TNF receptor via the oral route. The preferred feature according to the invention is the inoculation with a suspension of recombinant *Lactococcus lactis* cells, which had been engineered to produce the respective proteins.

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INTERNATIONAL SEARCH REPORT

Int'l Application No
PCT/EP 99/07800

A. CLASSIFICATION F SUBJECT MATTER
IPC 7 C07K14/54 C07K14/715

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 11277 A (DOMPE SPA ;TAGLIABUE ALDO (IT); BORASCHI DIANA (IT); BOSSU PAOLA () 18 April 1996 (1996-04-18) page 2, line 6 - line 11; claims 1-6,8 page 4, line 22 - line 27 page 6, line 29 -page 7, line 6 page 10, line 2 -page 11, line 20 page 11, line 28 -page 12, line 2 page 13, line 25 -page 15, line 2	1-6
A	WO 97 14806 A (UNIV CAMBRIDGE TECH ;STEIDLER LOTHAR (BE); REMAUT ERIK (BE); WELLS) 24 April 1997 (1997-04-24) cited in the application page 8, line 22 -page 9, line 6; claims 1,7,8,12,18 page 11, line 19 - line 25 page 12, line 23 -page 13, line 27 -/-	1-5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Charles, D

INTERNATIONAL SEARCH REPORT

Int'l. Jona'l Application No
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>STEIDLER L ET AL: "Mucosal delivery of murine interleukin-2 (IL-2) and IL-6 by recombinant strains of Lactococcus lactis coexpressing antigen and cytokine." INFECTION AND IMMUNITY, (1998 JUL) 66 (7) 3183-9. JOURNAL CODE: G07. ISSN: 0019-9567., XP002105819 United States the whole document</p>	1,3,6

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/EP 99/07800

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WO 9611277 A	18-04-1996	IT 1270123 B AU 3745395 A CA 2201721 A EP 0784689 A JP 10506791 T	28-04-1997 02-05-1996 18-04-1996 23-07-1997 07-07-1998
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